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IS : 11367 - 1985

Indian Standard

**GLOSSARY OF TERMS
RELATING TO TEXTILE MATERIALS FOR
AEROSPACE PURPOSES**

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**INDIAN STANDARDS INSTITUTION
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**AMENDMENT NO. 1 MAY 2004
TO
IS 11367 : 1985 GLOSSARY OF TERMS
RELATING TO TEXTILE MATERIALS FOR
AEROSPACE PURPOSES**

[Page 9, Heading 'Parachute (Research)'] — Substitute 'Parachute (Reserve)' for 'Parachute (Research)'.

(TX 13)

Reprography Unit, BIS, New Delhi, India

Indian Standard

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GLOSSARY OF TERMS RELATING TO TEXTILE MATERIALS FOR AEROSPACE PURPOSES

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 16 August 1985, after the draft finalized by the Textile Materials for Aerospace Purposes Sectional Committee had been approved by the Textile Division Council.

0.2 This standard is intended to provide standard definitions of technical terms relating to textile materials for aerospace purposes. While purporting to give the generally accepted meaning of a term, a definition should not be regarded as in any case taking the place of a specification.

0.3 The following Indian Standards may be referred to for the other commonly used terms relating to textiles which are not covered by this standard :

IS : 232-1985 Glossary of textile terms — natural fibres (*second revision*)

IS : 1324-1966 Glossary of textile terms relating to man-made fibre and fabric industry (*first revision*)

IS : 2364-1979 Glossary of textile terms — fabrics made from natural fibres (*first revision*)

IS : 3871-1984 Glossary of terms relating to fibre ropes and cordages (*first revision*)

IS : 4125-1967 Glossary of terms pertaining to defects in fabrics

IS : 6239-1971 Generic names for man-made fibres

IS : 9603-1980 Glossary of terms pertaining to textile processing

0.4 While preparing this standard, considerable assistance has been derived from BS 185 : 1973 ' Glossary of aeronautical and astronautical terms ', issued by the British Standards Institution and from ASTM D 123-1980 ' Definitions of terms relating to textiles ', issued by the American Society for Testing and Materials (ASTM).

1. SCOPE

1.1 This standard defines technical terms relating to textile materials for aerospace purposes.

2. DEFINITIONS

A

Aerospace — Pertaining to the properties of and activities in both the earth's atmosphere and space.

Air Permeability — The rate of air flow through fabric under differential pressures between the two fabric surfaces. Expressed generally in cubic metres of air per minute per square metre of fabric at a stated pressure difference between the two surfaces of the fabric.

Air Ventilated Suit — A suit designed to keep the body temperature within a comfortable range by discharging conditioned air from the suit over the body surface.

Air Wicking — It is air permeability in the plane of the fabric. The passage of air longitudinally along or through yarns in a fabric that has been encased and cured, for example, in rubber or other elastomers.

Anti-G Suit (G-Suit) — A suit that exerts pressure on the abdomen and lower parts of the body to prevent or retard the pooling of blood in these areas under positive acceleration.

Apex — The highest point in canopy of a parachute in a vertical descent.

Associated Air Mass — The mass of air which moves relative to the air stream at the same velocity as the canopy.

Axial Cord — A central rigging line joining the apex of a parachute to the lower extremities of the rigging lines.

B

Bias Construction — Arrangement of the gores such that the direction of the threads of the fabric makes an angle usually of 45°, with the centre line of the gore.

Block Construction — Arrangement of the gores such that the direction of the threads of the fabric is parallel to the centre line of the gore.

Blown Periphery — A portion of the peripheral hem blown between two rigging lines on another section of the canopy during inflation, and inflating inside out thus forming a lobe. This is sometimes erroneously termed '*thrown tine*'.

Bridle — A multi-lagged strop.

C

Canopy — The fabric body of a parachute, which provides high air-drag when inflated.

Channel Patch — A channel shaped fabric fitting secured to the envelope to enable a rigid member to be laced thereto.

Cluster — An assemblage of two or more parachutes attached to a single load and generally designed to open simultaneously.

Cross Seam — The seam joining two adjacent panels in a gore.

Crown — The upper portion of the canopy.

D

Diaphragm — A fabric partition within a lighter-than-air aircraft, which may be gastight to provide separate compartments (for example, ballonnet diaphragm) or non-gastight to maintain shape (for example, stabilizer diaphragm).

Drip Flap — A strip of fabric secured by one edge to the envelope or outer cover to deflect rain from the surface below it.

E

Elastic Fabric, Wide — A knitted or woven fabric constructed with elastomeric yarns either alone or in combination with other textile fibres, that is 152 mm in width or wider.

Elastic Fabric — A textile fabric made from an elastomer either alone or in combination with other textile materials.

Elastomeric Thread — The component conferring the elastic properties in the fabric. Generally it is either natural or synthetic rubber or polyurethane.

Envelope — a) The gas-containing unit of a balloon or non-rigid or semi-rigid airship.

b) The outer cover of an airship in which the gas containing units are surrounded by a layer of air or inert gas.

Eta Patch — A fan-shaped patch of fabric and webbing secured to the envelope.

F

Fabric, Airplane — A plain-weave fabric, well woven practically without imperfections, of mercerized two-ply yarns, width 90 to 140 cm, maximum mass 142.5 g/m² and yarns per inch warp and filling 80 to 84.

Fabric, Bonded — A layered fabric structure wherein a face or shell fabric is joined to a backing fabric, such as tricot, with an adhesive that does not significantly add to the thickness of the combined fabrics (*see also* Fabric, Laminated).

Fabric, Braided — A structure produced by interlacing several ends of yarns in a manner such that the paths of the yarns are not parallel to the fabric axis.

Fabric, Combustible — A fabric which after ignition will continue to burn at a moderate to fast rate.

Fabric dip — A chemical composition which is applied to a textile cord or fabric to improve its adhesion to rubber or other elastomer.

Fabric, Impregnated — A fabric in which the interstices between the yarns are completely filled with the impregnating compound throughout the thickness of the material, as distinguished from sized or coated materials, where these interstices are not completely filled.

Fabric, Laminated — A layered fabric structure wherein a face or outer fabric is joined to a continuous sheet material, such as polyurethane foam, in such a way that the identity of the continuous sheet material is retained, either by the flame method or by an adhesive, and this is in turn normally, but not always, is joined on the back with a backing fabric such as tricot (*see also* Fabric, Bonded).

Fabric, Noncombustible — A fabric that will neither ignite nor give off vapours that will ignite when subjected to external sources of ignition.

Fabric, Stable — A textile fabric, the dimensions of which do not change significantly with multiple passes through measuring devices.

NOTE — A stable fabric as defined above may not be dimensionally stable if subjected to a series of laundering or drycleaning operations.

Fabric, Treated — A fabric to which a finish has been applied in order to change the original level of a specific property or properties, for example, property or water repellency, crease resistance, soil resistance.

Free Balloon Net — A net over the envelope of a free balloon, from which the basket is suspended.

G

Gas-bag-Net — A net of cordage or wire to retain a gas bag in position.

Gas Main — A fabric hose running through the length of a rigid airship having branches to the gas bags for inflation.

Gore (Aerostat) — A shaped section of an envelope or gas bag made of fabric.

Gore (Parachute) — A shaped section of the canopy normally bounded by two adjacent rigging lines.

H

Harness — An assembly of straps or cords worn by parachutist or employed to suspend an inanimate load to which the parachute is attached.

Immersion Suit — A suit designed to protect the body against the effects of immersion in cold water.

I

Inflation Net — A net of cordage used to hold down an envelope during inflation.

Insulation Ratio, Effective — In thermal transmittance of textile, an indication of the increase in insulation afforded by the fabric in comparison to the uncovered test plate under specified conditions of test.

J

Jackets — A textile product, woven or felted into tubular or sleeve form ready for covering and shrinking on a machine roll.

K

Keeper — A ring, usually of webbing metal, forming the rigging lines into a riser.

L

Laid Cordage — Cordage constructed by twisting three or more strands about each other to form a helix round a central axis.

Lazy Leg — A cord intended to withdraw certain items of an assembly in correct sequence after the main withdrawal or static line has been released or fractured.

Lift Web — That part of the harness connected to the rigging lines.

Lip — A partial extension of the periphery of the canopy to facilitate inflation.

M

Man Alignment Drogue — A small stabilizing parachute attached to the parachutist so that, when it opens, his feet are directed towards the airflow.

Main Seam — The seam joining two adjacent gores in a canopy.

Multiply Fabric — Fabric formed of more than one ply.

P

Pack (Pack Cover, Inner Pack) — A fabric bag or envelope in which a parachute is packed.

Pack (Outer) — A fabric envelope in which other components of a parachute system are stowed when the canopy is packed in a separate inner pack.

Pack-Elastics — Elastic cords, with a means of fastening at either end, fixed under tension to pack flaps to ensure their quick opening.

Panel (Aerostat) — A sub-division of a gore.

Parachute — An umbrella-shaped, aerodynamic device to produce drag, commonly used to reduce the velocity of a moving body.

Parachute (Antispin) — A parachute attached to an aircraft to assist in its recovery from a spin.

Parachute (Approached) — A parachute deployed from an aircraft to steepen the approach.

Parachute (Automatic) — A parachute which is caused to deploy at a predetermined height by a barometric or other time delay device.

Parachute (Auxiliary) — A subsidiary parachute attached to the pack or to the main parachute to assist in the deployment sequence.

Parachute (Blank Gore) — A parachute in which the whole or part of one or more gores is cut out. The peripheral and vent hems are retained.

Parachute (Conical) — A parachute constructed from triangular gores which form a multi-sided pyramid or approximate cone.

Parachute (Drogue) — A relatively small parachute or parasheet commonly used to provide stabilization or for the initial stage of a compound parachute system.

Parachute (Emergency) — A parachute used by an occupant of an aircraft for an emergency descent.

Parachute (Extractor) — A parachute designed to withdraw a load from an aircraft in light.

Parachute (Flat) — A parachute, the canopy of which consists of triangular gores forming a regular polygon when laid out flat.

Parachute (Guide Surface) — A parachute in which the canopy is shaped in such a manner as to produce, close to the periphery, a re-entrant surface which acts as a guide or stabilizing member.

Parachute (Hem Rigged) — A parachute, the rigging lines of which are attached at the peripheral hem and do not pass over the canopy.

Parachute (Landing Brake) — A parachute deployed from an aircraft to reduce its landing run.

Parachute (Research) — A second parachute sometimes carried by a parachutist for use in emergencies when the parachute normally used fails to function.

Parachute (Ribbon) — A parachute, the gores of which are constructed of ribbons instead of continuous fabric.

Parachute (Ring Slot) — A parachute, the canopy of which is made up of concentric rings of fabric separated from each other by fixed distances and joined at regular intervals by radial tapes.

Parachute (Shaped) — A parachute, the canopy of which is constructed of gores that are not straight-sided.

Parachute (Square) — A parachute, the canopy of which when laid out flat, is approximately square.

Parachute (Stabilizing) — A parachute used to stabilize an otherwise unstable load.

Parachute (Retarder) — An extractor parachute used to deploy the main load-carrying parachute.

Parachute (Triangular) — A parachute which is approximately triangular when laid out flat.

Parallel Fabric — A multiply fabric with the warp threads of all the plies parallel.

Parasheet — A parachute constructed from a piece (or pieces with parallel warp) of fabric in the form of a regular polygon, with the rigging lines attached to apices of the polygon.

Parasheet (Gathered) — A parasheet, the periphery of which is constrained by a hem cord.

Parasheet (Ungathered) -- A parasheet, the periphery of which is not constrained by a hem cord.

Permeability — The rate of diffusion of gas through unit area of material under specified conditions.

Petticoat — A sleeve so pleated as to leave a clear passage when collapsed.

Porosity, Geometric — The percentage of aperture to total canopy area in a ribbon, ring slot or similar design of parachute.

Pressure Suit — A suit which is capable of exerting pressure on the body in order to counteract an increase of pressure in the lungs.

Pressure Suit, Full — A pressure suit which exerts pressure on the whole of the body.

Pressure Suit, Partial — A pressure suit which does not exert pressure on the whole of the body and is limited, therefore in, the altitude/time protection it affords.

R

Ribbon, Textile — A fine-textured, narrow fabric which weighs less than 5.25 kg/100 metres per dm of width approximately 510 g/m² and which is used primarily for trimming or decorative purposes.

NOTE — Usually ribbons are woven fabric less than 100 mm wide.

Rigging — The system of cords and their attachments by which the dead weight is distributed over the hull or envelope.

Rigging Band — A reinforced band secured to the envelope for the attachments of the rigging.

Rigging Line — Any cord attached to the canopy which transmits the drag of the parachute to the load.

Rip Cord (Aerostat) — A cord for tearing open the rip panel.

Rip Cord (Parachute) — A cord or flexible cable on a parachute which, when pulled, opens the pack and allows the parachute to deploy.

Riser — An extension of the rigging lines of a parachute formed into strop.

S

Safety Thread — A breakable thread of specified strength used to make a safety tie.

Safety Tie — A breakable tie connecting any two parts of a parachute system to prevent accidental release.

Searing — A damage to rigging lines or fabric due to heat generated by friction.

Skirt (Parachute) — The lower portion of the canopy.

Skirt, Hesitator — A weak tie around a folded canopy enclosing a bight of rigging lines to ensure their correct deployment before the canopy begins to inflate.

Sleeve (Sock, Deployment Bag) — A long fabric container for a canopy, to control its deployment from a parachute pack or stowage.

Sleeving — Braided, knitted or woven fabric of cylindrical form having a width less than 10 cm (circumference less than 20 cm).

Stowage Loops — Tape, webbing or cordage loops for stowing the rigging lift cables or wires in a pack.

Strop — A length of wire, cable, cordage or webbing, with loop ends or metal fittings attached to increase the distance at deployment between two components of a parachute assembly.

T

Tack Tear — The measurement of the resistance of a coated fabric to tearing under conditions simulating an installation that has been tacked in place.

Tape Elastic — A textile tape containing rubber or other elastomers to permit rubber-like stretch in at least one direction.

Teschengurt — Short lengths of tape or webbing, across and external to the rigging lines, joining adjacent lobes of the peripheral hem to increase the rate of inflation of the parachute.

Tear-off Cap — A piece of fabric, lightly sewn over the opening of a pack, and torn off by tension in the static line, allowing the parachute to deploy.

Trajectory Band — A band of webbing carried over the upper surface of an envelope to reduce deformation under load.

Trail Rope — a) A rope trailed by a balloon over the ground to decrease the ground speed and to regulate the height automatically when near the ground by varying the weight of the rope carried by the balloon.

b) A rope carried in an airship for ground handling.

Tubing — Braided, knitted or woven fabric of cylindrical form having a width of 10 cm or more (circumference of 20 cm or more) (*see also* sleeving).

V

Vent — An opening, usually at the apex of a canopy.

Vent Cap — A piece of fabric covering the vent, sewn on to the vent hem.

Vent Hem — The hem, usually reinforced by tape, round the periphery of the vent.

Vent Patch — A patch sewn into the crown of a canopy to reinforce the crown or to reduce its porosity.

W

Water-Cooled Suit — A suit designed to keep the body temperature within a comfortable range by circulating water through small pipes in the suit.

Weak Tie (Breaking Tie) — A piece of cord or thread which is intentionally broken at some stage of the deployment of a parachute in order that the deployment may occur in some predetermined manner.

Webbing, Elastic — A textile webbing containing rubber or other elastomers to permit rubber-like stretch in at least one direction (*see also* webbing, textile).

Webbing, Textile — A stout narrow fabric weighing at least 5.25 kg/100 metres per dm of width (approximately 510 g/m²).

Wind-Sock (Wind Cone, Wind Sleeve) — A wind indicator in the form of a truncated fabric cones.



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